

IN THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims

1-10. Canceled.

11. (New) A method of producing a I-III-VI_y compound in thin film form, in which y is close to 2, by electrochemistry, comprising:

a) providing an electrolysis bath comprising at least one element III compound dissolved in the electrolysis bath and at least two electrodes immersed in the electrolysis bath; and,

b) applying a potential difference between the two electrodes to initiate formation of a thin film of I-III-VI_y on the surface of one of the electrodes,

wherein the electrolysis bath further comprises at least one surfactant to promote incorporation of the element III compound into the film.

12. (New) The method of Claim 11, wherein the element III compound comprises gallium or aluminum.

13. (New) The method of Claim 11, wherein the surfactant has a chemical formula CH₃(CH₂)_nO-SO₃-X, where n is greater than or equal to 5 and X is an atomic species selected from the group consisting of H, Na, Li and K.

14. (New) The method of Claim 13, wherein the surfactant comprises sodium dodecylsulfate.

15. (New) The method of Claim 11, wherein the surfactant comprises 2-butyne-1,4-diol.
16. (New) The method of Claim 11, wherein the surfactant comprises maleic acid.
17. (New) The method of Claim 11, wherein the surfactant comprises succinic acid.
18. (New) The method of Claim 11, wherein the surfactant comprises fumaric acid.
19. (New) The method of Claim 11, wherein the surfactant comprises crotonic acid.
20. (New) The method of Claim 12, wherein the surfactant in the electrolysis bath is in a concentration substantially of the same order of magnitude as a concentration of gallium or a concentration of aluminum in the electrolysis bath.